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Taxonomic studies of *Ellisembia* from Hainan, China

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Abstract — Two new species of the anamorphic genus *Ellisembia* were collected from tropical forests in Hainan Province, China. *Ellisembia podocarpi* sp. nov. and *E. photiniae* sp. nov., occurring respectively on dead branches of *Podocarpus imbricatus* and *Photinia parvifolia*, are described and illustrated. They are compared with similar species.

Key words —anamorphic fungi, taxonomy

Introduction

The genus *Ellisembia* was introduced by Subramanian (1992) to accommodate *Sporidesmium*-like species that have determinate or irregularly percurrently extending conidiogenous cells that produce distoseptate conidia. Wu & Zhuang (2005) merged *Imicles* Shoemaker & Hambl. (Shoemaker & Hambleton 2001) into *Ellisembia*, and expanded the generic concept to include typically lageniform, ovoid or doliiform percurrently extending conidiogenous cells. Following the generic concept of Subramanian (1992) and Wu & Zhuang (2005), more than 40 species have been described under *Ellisembia*, most of which are saprobes on rotten wood and dead branches of various plants (Subramanian 1992, McKenzie 1995, 2010, Goh & Hyde 1999, Mena & Delgado 2000, Zhou & Hyde 2001, Wu & Zhuang 2005, Heuchert & Braun 2006, Ma et al. 2008).

The tropical forests of Hainan have a rich mycota, and many wood-inhabiting fungi have been discovered there (Dai & Cui 2006, Zhang et al. 2009, Dai & Li 2010). During an ongoing mycological survey in these forests, numerous conidial fungi were collected on dead branches. Among these were two species having the morphological characteristics of genus *Ellisembia*. They differ

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significantly from previously described *Ellisembia* species and are therefore proposed as new taxa.

Taxonomy

Ellisembia podocarpi Jian Ma & X.G. Zhang, **sp. nov.** FIGS. 1–4

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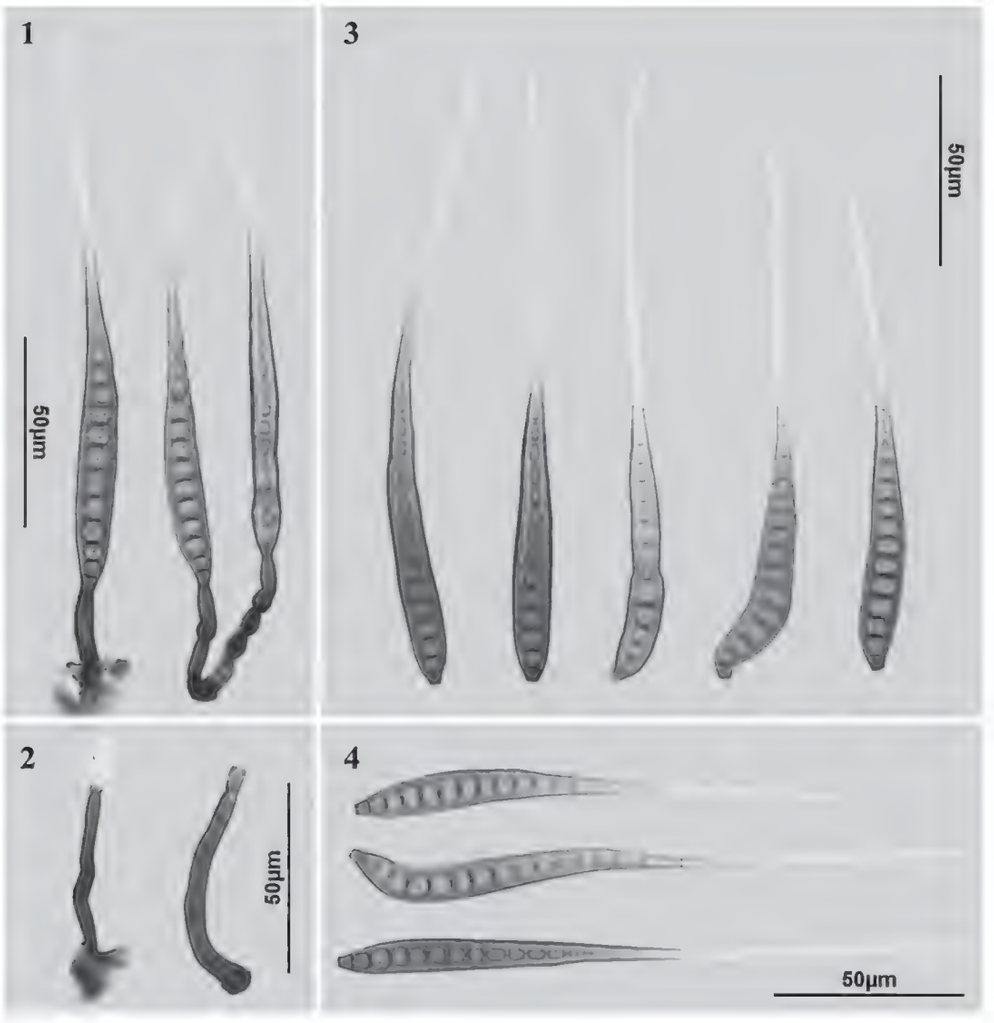
Fungus anamorphicus. Coloniae in substrato naturali effusae, brunneae, pilosae. Mycelium partim superficiale, partim immersum in substrato, ex hyphis ramosis, septatis, pallide brunneis, laevibus, 1.5–3 µm crassis compositum. Conidiophora macronemata, mononematica, singula vel fasciculata, erecta, nonramosa, recta vel flexuosa, cylindrica, brunnea, laevia, septata, 32–65 × 3–5.5 µm. Cellulae conidiogenae monoblasticae, integratae, terminales, lageniformes vel cylindricae, brunneae, laeves, 8–16 × 3–4.5 µm, ad usque 0–3 proliferationes lageniformes vel doliiformes percurrentes. Conidiorum secessio schizolytica. Conidia holoblastica, solitaria, acrogena, recta vel curvata, obclavata, ad longa rostrata, laevia, brunnea vel pallide brunnea, 13–19-distoseptata, 110–170 µm longa (rostro incluso), 7.5–10 µm crassa, basi truncata 2–4 µm lata, cellula apicali versus attenuate, pallide brunnea vel subhyalina, aseptata, laevia, rostro, ad usque 80 µm longo, 1–2.5 µm lato.

Holotype: on dead branches of *Podocarpus imbricatus* Blume (*Podocarpaceae*), tropical forest of Jianfengling, Hainan Province, China. 3 May 2007, J. Ma, HSAUP H5281 (isotype HMAS 146080).

Etymology: in reference to the host genus, *Podocarpus*.

Anamorphic fungi. Colonies on natural substrate effuse, brown, hairy. Mycelium partly superficial, partly immersed in the substratum, composed of branched, septate, pale brown, smooth-walled hyphae, 1.5–3 µm thick. Conidiophores macronematous, mononematous, singly or in groups, erect, unbranched, straight or flexuous, cylindrical, brown, smooth, septate, 32–65 × 3–5.5 µm. Conidiogenous cells monoblastic, integrated, terminal, lageniform or cylindrical, brown, smooth, 8–16 × 3–4.5 µm, with 0–3 lageniform or doliiform percurrent proliferations. Conidial secession schizolytic. Conidia holoblastic, solitary, acrogenous, straight or curved, obclavate to long-rostrate, smooth-walled, brown to pale brown, 13–19-distoseptate, 110–170 µm long (rostrum included), 7.5–10 µm thick in the broadest part, 2–4 µm wide at the truncate base, apex extended into a pale brown to subhyaline, aseptate, smooth, rostrum, up to 80 µm long, 1–2.5 µm wide.

Ellisembia podocarpi is morphologically most similar to *E. filia* W.P. Wu (Wu & Zhuang 2005) and *E. maungatautari* McKenzie (McKenzie 2010), but differs from *E. filia* (conidia 40–50 µm long, 7–9-distoseptate) in having longer conidia with more numerous distosepta, and from *E. maungatautari* (conidia 13–15 µm wide, 17–23-distoseptate) in having narrower conidia with fewer distosepta. In addition, conidiophores of *E. podocarpi* extend percurrently up to 3 times while *E. filia* and *E. maungatautari* conidiophores do not extend.



Figs. 1–4. *Ellisembia podocarpi*. 1, 2. Conidiophores with terminal conidia. 3, 4. Conidia.

Ellisembia photiniae Jian Ma & X.G. Zhang, **sp. nov.** FIGS. 5–7

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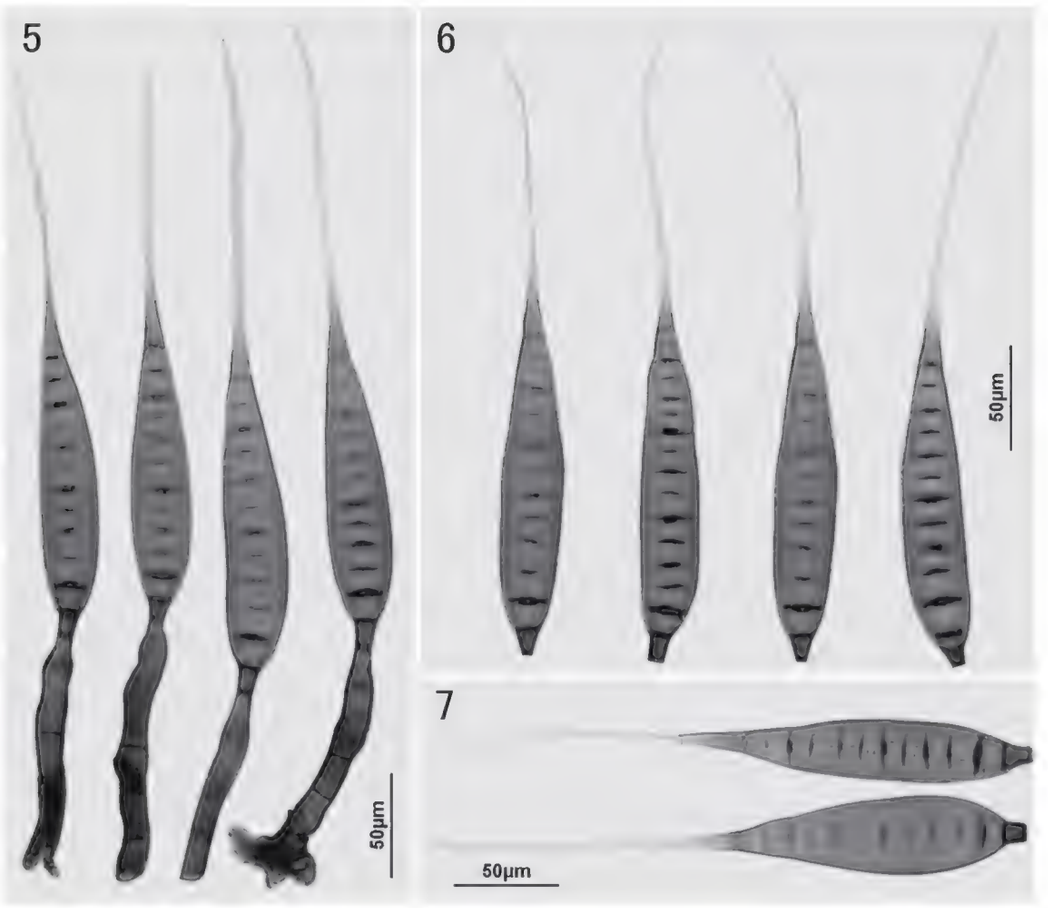
Fungus anamorphicus. Coloniae in substrato naturali effusae, brunneae, pilosae. Mycelium partim superficiale, partim immersum in substrato, ex hyphis ramosis, septatis, pallide brunneis, laevibus, 1.5–2.5 µm crassis compositum. Conidiophora macronemata, mononematica, singula vel fasciculata, erecta, nonramosa, recta vel flexuosa, cylindrica, brunnea vel atrobrunnea, laevia, septata, 8.5–32 × 5.5–7.5 µm. Cellulae conidiogenae monoblasticae, integratae, terminales, lageniformes vel cylindricae, brunneae, laeves, 27–30 × 6.5–7.5 µm, ad usque 0–1 proliferationes cylindricaes percurrentes. Conidiorum secessio schizolytica. Conidia holoblastica, solitaria, acrogena, recta vel leviter curvata, obclavata, ad longa rostrata, laevia, brunnea vel pallide brunnea, 10–16-distoseptata, 92–170 µm longa (rostro incluso), 13–16 µm crassa, basi truncata 3–5 µm lata, cellula apicali versus attenuate, pallide brunnea vel subhyalina, aseptata, laevia, rostro 43–90 × 1–1.5 µm.

Holotype: on dead branches of *Photinia parvifolia* C.K. Schneid. (*Rosaceae*), tropical forest of Bawangling, Hainan Province, China. 10 Dec 2009, J. Ma, HSAUP H5189–4 (isotype HMAS 146081).



Figs. 5–7. *Ellisembia photiniae*. 5. Conidiophores with terminal conidia. 6, 7. Conidia.

Etymology: in reference to the host genus, *Photinia*.

Anamorphic fungi. Colonies on natural substrate effuse, brown, hairy. Mycelium partly superficial, partly immersed in the substratum, composed of branched, septate, pale brown, smooth-walled hyphae, 1.5–2.5 µm thick. Conidiophores macronematous, mononematous, singly or in groups, erect, unbranched, straight or flexuous, cylindrical, brown to dark brown, smooth, septate, 8.5–32 × 5.5–7.5 µm. Conidiogenous cells monoblastic, integrated, terminal, lageniform or cylindrical, brown, smooth, 27–30 × 6.5–7.5 µm wide, with 0–1 cylindrical percurrent proliferations. Conidial secession schizolytic. Conidia holoblastic, solitary, acrogenous, straight or slightly curved, obclavate to long-rostrate, smooth-walled, brown to pale brown, 10–16-distoseptate, 92–170 µm long (rostrum included), 13–16 µm thick in the broadest part, 3–5 µm wide at the truncate base, apex extended into a pale brown to subhyaline, aseptate, smooth, rostrum 43–90 × 1–1.5 µm.

Ellisembia photiniae bears some resemblances to *E. filia* (Wu & Zhuang 2005) and *E. maungatautari* (McKenzie 2010) in conidial shape. However, conidia of *E. photiniae* are distinctly larger than those of *E. filia* (conidia 40–50 × 7–8

μm), and shorter than those of *E. maungatautari* (conidia 85–125 μm long). In addition, conidia of *E. photiniae* have 10–16 distosepta, while those of *E. filia* and *E. maungatautari* have 7–9 and 17–23 distosepta, respectively.

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